

# *Statement of Findings for Floodplains and Wetlands*

*for Improvements to Island Facilities  
and Infrastructure*

Assateague Island  
National Seashore

Recommended

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Superintendent, Assateague Island National Seashore

Date

Certified for Technical Adequacy and Servicewide Consistency:

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Chief, Water Resources Division

Date

Approved:

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Northeast Regional Director

## INTRODUCTION

The National Park Service (NPS) has prepared and made available a Draft Environmental Assessment/Assessment of Effect (EA/AOE) for proposed improvements to island facilities and infrastructure at Assateague Island National Seashore (NS) in Berlin, Maryland (Figure 1 in the EA/AOE).

Executive Orders 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, require the NPS and other federal agencies to evaluate the likely impacts of actions in floodplains and wetlands. NPS Director's Order (DO) #77-2: *Floodplain Management* (DO #77-2) and Procedural Manual #77-2 outline NPS procedures for complying with Executive Order 11988. NPS DO #77-1: *Wetland Protection* and Procedural Manual #77-1 provide NPS policies and procedures for complying with Executive Order 11990. This Statement of Findings (SOF) documents compliance with these NPS management procedures.

## PROPOSED ACTION

The NPS Preferred Alternative (Alternative D in the EA/AOE) would consolidate the existing North District Entrance Station and Ranger Station west of the entry and exit lanes. Three bathhouse facilities would be constructed within an expanded Day-Use parking lot. An observation platform and boardwalk would be constructed on the ocean side of the island behind the primary dune, and a new wastewater dump station would be consolidated near the existing Ranger Station (Figure 13 in the EA/AOE).

Under this alternative, the North District Entrance Station and Ranger Station would be consolidated into a new facility encompassing approximately 4,000 square feet west of the existing entry and exit lanes, and the existing Ranger Station would be demolished (Figure 14 in the EA/AOE). This facility would not be a prefabricated structure although it would be elevated, movable, and storm resistant. Staff parking would be accommodated in several smaller parking lots established within the 37,092-square-foot “kidney bean” parking lot. The north entrance of the parking lot would be opened to one-way traffic, and trailers and recreational vehicles would be directed into a parking lot in front of the new Ranger Station to improve traffic flow and reduce the mix of vehicles and trailers. There would be three lanes for visitors to pay entrance fees and once through the fee area, visitors would have a choice of entering the park and Day-Use area or exiting the park. Rangers and visitors needing to reach the facility would have access to a parking lot behind the new building.

In addition, the existing Day-Use bathhouse facility would be demolished and three new bathhouse facilities would be constructed in the footprint of the existing Day-Use parking lot. The Day-Use parking lot would also be reconfigured, with the eastern third of the parking lot reclaimed for naturally occurring vegetation. By extending the parking to the north and south, the reconfiguration would allow for 453 parking stalls. The parking lot would also include stormwater management facilities.

The observation platform would be constructed on the ocean side of the island (Figure 14 in the EA/AOE). The platform would be built eight-feet off the ground, high enough to allow users to see over the adjacent dune. The boardwalk connecting the platform to the nearby parking lot would be 170-feet

long on a 5% slope, for a total of 1,360 square feet. The platform itself would be 20-feet by 20-feet to encompass a total of 400 square feet. This location would also require a new trail for access as the dune crossings are typically high traffic areas with people moving their beach accessories. An interpretive pavilion and picnic area would also be constructed.

The wastewater dump station facilities under this alternative would be consolidated into one location near the existing Ranger Station, on the east side of Bayberry Drive that would be easily accessible by off-road vehicle (ORV) users and campers (Figure 15 in the EA/AOE). The new consolidated dump station would include three lanes with two islands for multiple users to access the facility at one time. Holding tanks would be sized to be sufficient for anticipated use and the facility would be constructed to contain spillage. The existing facilities would be removed and the sites restored to natural conditions.

In addition to these elements, the toilet/shower complexes at the Oceanside and Bayside campgrounds would be replaced with a consistent prototype. The toilet/shower complex prototypes would be steel reinforced, 5,000-psi concrete construction. The walls and roof structure would be made with “colored thru concrete” which are spray coated with an exterior finish stain and an anti-graffiti sealer. The waste collecting vaults of these toilets, installed below-ground, would be made of four-inch thick reinforced concrete and lined with a black plastic liner cast into the sidewalls of the vault. Because the dimensions of the vault match the perimeter of the building, it creates a stable footing structure that supports the full weight of the building. Each vault can hold a minimum of 1,000 gallons of water equivalent to approximately 15,000 uses, and is sloped so that waste would drain to the clean out end of the vault. A black plastic vent pipe, located on the backside of the building is heated by the sun and creates a continual airflow through louvered vents located in the building near the floor. This allows the air to flow down the riser, through the vault, and finally up and out of the vent pipe, not through the building to keep it odor free. The toilet and shower would be located on the short side of the facility with a small space for utility storage and a place inside for people to put shower accessories while using the facility. This complex would be universally accessible designed, with a 60-inch turning radius exclusive of all fixtures, walls, and doors. The existing footprint of each building would be maintained as much as possible to minimize impacts to disturbed areas and existing walkways would be utilized for the new facilities where feasible. The new facilities would also utilize an infiltration system to collect and treat wastewater. The existing number of toilet/shower complexes would remain unchanged for each alternative.

Finally, both the Oceanside and Bayside campground water lines would be upgraded. New two-inch lines would be placed along the shoulder of Bayberry Drive, and lines would then be pushed into campsites as required to minimize impacts to natural resources. In addition, a new two-inch line would be installed along the shoulder of Ferry Landing Road to provide water to that area of the park. The existing lines would be abandoned in place to reduce impacts to natural resources.

## **SITE DESCRIPTION**

### **FLOODPLAINS**

Floodplains are fluvial lands adjacent to freshwater streams and rivers that receive floodwaters once the water has overtopped the bank of the main channel. This is typically the result of a higher than normal influx of upstream water supplies (water moving from higher elevations to lower elevations). Floodplains are important resources in the storage and filtering of these floodwaters. A “flood zone” is an area subject to the risk of flooding by any natural means, either by water cresting the banks of channels (fluvial floodplain) or by tidal storm surges. Tidal storm surges occur when water is pushed up by high winds from a low elevation to a higher elevation because of coastal storms and hurricanes. Construction within a floodplain can result in direct long-term impacts, including a decrease in flood storage volumes, the restriction of natural flow patterns, and the exacerbation of catastrophic flooding in upstream and downstream areas.

In an effort to protect development from flood damage, as well as protecting natural floodplain values, the Federal Emergency Management Agency (FEMA) is tasked with identifying flood-prone areas. According to FEMA maps dated June 16, 1992, two flood zones exist within the NPS portion of Assateague Island. The first zone, labeled A-12 on FEMA mapping, includes the estimated land area inundated by a storm surge with a water level of 8.0 feet above sea level (National Geodetic Vertical Datum (NGVD) of 1929). This designation means that there is the probability of a flood event reaching elevation 8.0 feet once every 100 years. Almost the entire island falls within this zone.

The second flood zone designation on the FEMA mapping is zone V-7. This zone represents the area influenced by wave action during a catastrophic flood event with a probability of occurring once every 100 years. This zone includes the area above the 8.0 foot storm surge elevation where wave action is expected to occur. FEMA has determined this elevation to be 12.0 feet above sea level (NGVD29). The land area within this zone is isolated to the beach and primary dunes along the ocean side of the island.

FEMA does not designate an elevation for the predicted 500-year flood event for the Assateague Island National Seashore, only because a 100-year flood event (i.e. a less intensive storm surge) would already inundate the island.

Because the entire island falls within the A-12, 100-year flood zone designation, all of the proposed improvements to the campground toilet/shower facilities, Day-Use bathhouse and parking lot, and dump stations would be flooded during a 100-year storm surge. The newly proposed ranger entrance station would be constructed with a floor elevation at or slightly above the 100-year flood elevation of 8.0 feet. Similarly, the observation platform would reach an elevation of 8.0 feet.

## WETLANDS

The U.S. Environmental Protection Agency (EPA) and the U. S. Army Corps of Engineers (USACE) define wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions” (USACE 1987). Determination of a jurisdictional wetland requires the presence of three parameters: hydric soil, a dominance of hydrophytic vegetation, and hydrology. This determination is tied to the application of Section 404 of the Clean Water Act, which provides for the protection of “waters of the United States,” including wetlands, and instructs the USACE to issue permits for activities that result in the discharge of dredged or fill material into these areas.

The USFWS, however, defines wetlands as “...lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year” (Cowardin et al. 1979). This determination is more comprehensive than the USACE’s, recognizing that natural, physical, or chemical conditions such as wave action, currents, or high salinity may prevent development of hydric soils or hydrophytic vegetation in some wetland types. Therefore, some un-vegetated and/or non-hydric soil sites, such as mudflats or high-energy shorelines, may not exhibit all three attributes but are still classified as wetlands.

The USFWS has been tasked with inventorying and mapping all wetlands within the United States. This effort has produced the National Wetlands Inventory (NWI), which uses the Cowardin et al. (1979) classification system to distinguish the different wetland and deep water habitats. The inventory is based primarily on a review of aerial photographs, soil surveys, and hydrological data. While the NWI is useful as a preliminary planning tool, it should be noted that the inventory is a product of very limited field verification. As such, inaccuracies are not uncommon, and prior to any work occurring, wetland biologists should always field corroborate the NWI with site-specific studies, the most accurate of which would be a wetland delineation utilizing the USACE Wetland Delineation Manual (1987).

To comply with Executive Order 11990 (*Protection of Wetlands*), the NPS issued DO #77-1. This order directs the NPS to use the USFWS determination as the standard for defining, classifying, and inventorying wetlands, when NPS actions have the potential to adversely impact wetlands. The NPS must also comply with Section 404 of the Clean Water Act when those actions involve placing dredged or fill material in “waters of the United States.”

Based on NPS requirements, wetland scientists initiated the field identification and classification of wetlands within the Assateague Island NS study areas using the park’s wetlands Geographic Information System (GIS) database, the NWI, local soil survey, and aerial photographs. This information was used to confirm the presence and type of wetlands (Figures 17 and 17a in the EA/AOE)

Saltwater tidal and freshwater non-tidal wetlands all occur within the study areas. Tidal wetlands, including marshes and scrub-shrub systems along the western side (bayside) of the island, occur west of

the temporary parking area and along the northwest side of Ferry Landing Road. Tidal marsh areas are dominated by black needle rush (*Juncus roemerianus*), salt marsh cordgrass (*Spartina alterniflora*), salt meadow cordgrass (*Spartina patens*), and giant cordgrass (*Spartina cynosuroides*), and are classified as Estuarine Inter-tidal Persistent Emergent Regularly Flooded (E2EM2N). Adjacent to these areas along the landward side are patches of tidal scrub-shrub habitat dominated by wax myrtle, salt bush, and humpweed. These areas are classified as Estuarine Inter-tidal Scrub-shrub Regularly Flooded (E2SSN).

The NWI also identifies a large estuarine scrub-shrub area immediately west of the parking area. Based on the field assessment, this system actually comprises three different wetland types, two of which appear to function from a high ground water table (freshwater) rather than tidal influence. Immediately bordering the parking area there is an emergent, freshwater wetland classified as Palustrine Persistent Emergent Seasonally Flooded (PEM2C), populated almost entirely by giant reed (*Phragmites australis*). Adjacent to this system is a pine dominated wetland with a mixture of red maple and sweet gum, with royal fern in the understory (see the “Vegetation” section in Chapter 3 of the EA/AOE). The Cowardin classification of this system is Palustrine Needle-leaved Evergreen Forest Seasonally Flooded (PFO4C). The third system is a tidally influenced scrub-shrub wetland dominated by wax myrtle. This area is classified as Estuarine Inter-tidal Broad-leaved Evergreen Scrub-Shrub Irregularly Flooded (E2SS3P).

Inter-dunal swales occur north and south of the Day-Use parking area, as well as throughout the Oceanside campground. These swales occur as either freshwater emergent systems (PEM2C) or freshwater scrub-shrub wetlands (PSS3C). Inter-dunal swales typically occur as part of the secondary dune system within depressional areas with a high fluctuating water table. Areas where the water table is at or above the surface for prolonged periods of time develop into densely populated areas of shrubs and herbaceous plants that include: wax myrtle, bayberry, greenbriar (*Smilax* spp.), blackberry (*Rubus* spp.), broomsedge (*Andropogon glomeratus*), various sedges (*Carex* spp.), spikegrass (*Eleocharis palustris*), salt bush (*Baccharis halimifolia*), and swamp rose (*Rosa palustris*). Less defined inter-dunal swales occur in areas where saturation at the ground surface lasts for a much shorter duration, but is sufficient to support wax myrtle, bayberry, broomsedge (*Andropogon virginicus*), needle-pod rush (*Juncus scirpoides*), high bush blueberry (*Vaccinium corymbosum*), various panic grasses (*Panicum* spp.), and stunted stems of loblolly pine (*Pinus taeda*).

The area proposed for a wastewater dump station just east of Bayberry Drive contains another loblolly pine dominated wetland system classified as PFO4C. This system is dominated by loblolly pine, red maple, royal fern, and greenbriar (*Smilax rotundifolia*).

## JUSTIFICATION FOR USE OF THE FLOODPLAIN AND WETLANDS

### FLOODPLAINS

Assateague Island is considered one of the few remaining barrier islands along the Mid-Atlantic coast of the United States that has retained its natural, island properties. This is due in large part to the NPS presence on the island, which has kept development to a minimum and ensured that any new construction is appropriate for the island dynamics. Along with protecting the island, the park is charged with

providing public access to the site for recreational and educational opportunities. The NPS has dedicated itself to ensure that all of its actions on the island not only meet its need for recreational and educational opportunities, but also protect the critical island dynamic. Therefore, while some level of development is necessary within the flood zone, it should not be expected to significantly impact the flood zone or floodplain values.

The entire NPS portion of Assateague Island falls within one of the two flood zones, as mapped by FEMA, based on the 100-year storm surge. As such, it is nearly impossible for any park development to occur outside of the flood zone. The best one could hope to achieve is for any new development to be above the 100-year flood elevation. However, it is impractical to have the improvements proposed to be constructed above the 8-foot elevation, with the exception of the floor elevation of the new ranger station and observation platform. Other development activities such as the parking area, bathhouses, toilet/shower facilities, underground water line, and dump stations would be inundated by a flood event. The negative affects of a flood on these improvements would be minimal and could be offset by mitigative actions described below.

## **WETLANDS**

Wetlands are an important natural resource found throughout Assateague Island. The nature of these wetlands is tied to the barrier island dynamic that the NPS strives to protect. Because of the size and quantity of the wetlands on the island, it is nearly impossible for any development to occur without impacting wetland resources. Impacts to wetlands, therefore, would be restricted to those absolutely necessary for the project. As such, both the new ranger/entrance station and Day-Use bathhouse would be designed to avoid impacts to wetlands.

Also, the observation platform would be placed on the oceanside of the park just north of the existing Day-Use parking area. The placement of the boardwalk at this location would require it to cross a rather large inter-dunal swale comprising most scrub-shrub woody vegetation (PSS3C). The boardwalk is expected to be elevated in such a manner as to allow angled sunlight to reach the ground surface so that natural wetland vegetation can continue to grow. Therefore, no long-term impacts to wetlands are expected as a result of the placement of the observation platform.

However, the reconfiguration of the Day-Use parking lot would require minor impacts to several small inter-dunal swales (PEM1A) in addition to a larger inter-dunal swale dominated by scrub-shrub vegetation (PSS3C). Total impacts for the parking area would amount to approximately 5,000sf (0.1 acre).

Also, a small portion of the new, consolidated dump station comprises a non-tidal scrub-shrub wetland. The placement of this station would result in a minor impact to the wetland system, but not at an extent great enough to require mitigation.

Finally, work to install the proposed waterline improvements would be performed using a small trenching machine, like those used for installing cable wire. While water lines would cross small wetland areas, the

lines would be rammed through the subsurface soils, rather than trenching through surface wetlands. This would allow the project to avoid measurable impacts to these wetlands.

## **INVESTIGATION OF ALTERNATIVES**

As stated above, the project proposes improving infrastructure and island facilities at Assateague Island NS. Therefore, no alternative sites are available that could be considered for the project. However, three action alternatives were considered. The EA/AOE examines the NPS Preferred Alternative, as well as the two other action alternatives, a No Action Alternative, and other alternatives dismissed from analysis.

## **BUILD ALTERNATIVES**

The two build alternatives sought to improve infrastructure and facilities by utilizing the same elements in different locations. Alternative B in the EA/AOE would upgrade the North District Entrance Station and Ranger Station. Two bathhouse facilities on either end of the Day-Use parking lot would be constructed and the existing Day-Use parking lot would be reconfigured within the existing footprint. An observation platform and boardwalk would also be constructed at the north end of the kidney bean parking lot, and an interpretive pavilion and picnic area would be created. The wastewater dump stations would also be upgraded in their current locations (Figure 3 in the EA/AOE).

Alternative C in the EA/AOE would consolidate the existing North District Entrance Station and Ranger Station and construct a new facility between the existing entry and exit lanes. Three bathhouse facilities would be constructed within a reconfigured Day-Use parking lot that would reclaim the eastern half of the parking lot for vegetation. An observation platform and boardwalk, similar to the one constructed in Alternative B, would be constructed at the south end of the kidney bean parking lot, as would the interpretive pavilion and picnic area. The Bayside campground wastewater dump station would be upgraded with a new facility constructed by the Coast Guard Lifesaving House. Because of the new facility, the Oceanside campground wastewater dump station would be removed (Figure 9 in the EA/AOE).

## **NO ACTION ALTERNATIVE**

The No Action Alternative in the EA/AOE would keep the North District Entrance Station and Ranger Station in their current location as separate facilities. The Day-Use bathhouse and Day-Use parking lot would also remain in their current configurations and would continue to use the existing drainfield in its location close to the beach. Existing curbs and gutters would also remain in the Day-Use parking lot. No observation platform would be constructed under this alternative, and the park would provide no interpretive pavilion. The existing picnic areas would continue to be used in their current location and configuration. The wastewater dump stations would also remain in their current locations under the No Action Alternative. Finally, the toilet/shower complexes and water lines would remain unchanged.



## **ALTERNATIVES CONSIDERED BUT DISMISSED**

The EA/AOE also considers several alternatives that were dismissed from further analysis. These include splitting the North District Entrance Station and Ranger Station functions between one facility west of the entry and exit lanes and a facility east of the exit lane within the Day-Use parking lot, placing a consolidated North District Entrance Station and Ranger Station facility west of the entry and exit lanes with visitors using an intercom system, placing an observation platform in the “kidney bean” parking lot, placing a consolidated wastewater dump station within the Park Maintenance complex, and placing a consolidated wastewater dump station on the edge of the Day-Use parking lot.

## **MITIGATIVE ACTIONS**

The design of the proposed action seeks to avoid wetland and floodplain resources as much as possible. In locations where it was impossible to avoid these resources, the location and design of proposed structures were selected based on their ability to minimize impacts to sensitive wetland and floodplain resources. General mitigative measures would also include sustainable design and use of durable building materials, application of best management practices (BMPs) for stormwater management, and use of standard erosion and sediment control measures throughout the construction process.

### **Floodplain Mitigation**

As stated earlier, it is impractical for much of the proposed infrastructure (parking, bathrooms, showers, etc.) to be constructed above the 100-year flood elevation of 8.0 feet NGVD. The new Ranger Station would also be designed and constructed to withstand both storm winds and hurricane flooding. The floor elevation will be placed above the 100-year flood elevation of 8.0 feet NGVD to further avoid floodplain impacts. Plans will also incorporate the use of materials to withstand the temporary flooding that comes from a storm surge. In other locations, efforts will also be made to remove or tie down any loose materials that could be blown away by storm force winds. These measures include securing the shower/bathroom facilities and pumping out the wastewater dump stations just prior to the arrival of a storm. These activities would be easily implemented and most likely successful.

### **Wetland Mitigation**

Wetlands play a major role in providing habitat for certain animals, as well as filtering and storing stormwater runoff. In protecting these functions, improvements to the facilities would attempt to avoid wetlands to the greatest degree possible. For those actions that require encroachment into wetlands, work will include steps to minimize the impacts of the encroachment. Such actions include the use of pile supported structures for any pedestrian paths rather than fill material. In the case of the waterlines, wetlands would be avoided by driving the pipes horizontally through subsurface soils rather than impacting wetlands.

To offset storm storage and filtering functions in surrounding wetlands, new stormwater management facilities, or BMPs, would be developed around the Day-use bathhouse and Day-Use parking area. Small landscaped areas in or adjacent to the parking lot would be utilized for various types of stormwater filtering systems. The areas may range from approximately 300 square feet to over 5,000 square feet

(Figure 16 in the EA/AOE). The systems used for filtering stormwater would include shallow grassed swales for narrow linear areas along the outer edge of the parking lot and along access roads. By strategically grading the parking lot and access roads, stormwater runoff would flow to the swales and be conveyed at a velocity of less than 1.5 feet/second to the stormwater management system. This velocity is important, as it rapidly removes water from the impervious surfaces, but at a rate that surrounding wetland systems can handle without being overwhelmed.

Finally, the improvements to the Day-Use parking lot would constitute an impact of approximately 0.1 acre to a depressional wetland. A wetland delineation would be required prior to construction to confirm this wetland and ensure that it is a depression. As long as it is confirmed to be depressional, the project would require a state permit and mitigation on a 1:1 or 1:1.5 ratio. One potential for mitigation would be to excavate an upland area immediately adjacent to one of the inter-dunal swales at an elevation that matches the inter-dunal swale. The excavated area would receive water from a high groundwater table after rain events, and plant life would seed naturally from existing wetland plants in the neighboring wetland. The final mitigation plan would be included in the design plans and reliant on the final delineation.

## **COMPLIANCE**

In the State of Maryland, development in waters and wetland habitats is regulated by statutes at the local, state, and federal levels. Permits will be obtained under the following regulations:

### ***Section 404 of the Clean Water Act***

Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States. Certain activities, such as pile supported boardwalks, may not require federal authorization. However, fill for the parking area and the placement of the underground water lines are actions that impact waters of the United States as defined by the Clean Water Act, and are therefore subject to review by the U.S. Army Corps of Engineers.

### ***Section 10 of the Rivers and Harbors Act***

Section 10 of the Rivers and Harbors Act is also administered by the U.S. Army Corps of Engineers and regulates construction, filling, dredging, or excavation in navigable waters of the United States. No action is proposed that would require Section 10 authorization.

### ***Maryland Department of the Environment***

Under Title 26 DEPARTMENT OF THE ENVIRONMENT Subtitle 23 NONTIDAL WETLANDS and subtitle 24 TIDAL WETLANDS, the project would require permit authorization from the State of Maryland.

***National Environmental Policy Act***

The EA/AOE, this SOF for the EA/AOE, and the subsequent Finding of No Significant Impact would complete the requirements for the National Environmental Policy Act for this project.

**CONCLUSION**

The proposed actions were designed to avoid and minimize impacts to wetlands and floodplains while improving visitor access and recreation at Assateague Island NS. No net loss of wetlands or floodplain values is expected.

The NPS finds that the proposed action is consistent with the policies and procedures of NPS DO #77-1, *Wetland Protection*, and DO #77-2, *Floodplain Management*.



## REFERENCES

Cowardin, L. M., V. Carter, F. C. Golet and E. T. LaRoe. 1979. *Classifications of wetlands and deepwater habitats of the United States*.

National Park Service. 2002. Director's Order #77-1, *Wetland Protection*.

2002a. *Wetland Protection Procedural Manual*.

2003. Director's Order #77-2. *Floodplain Management*.

2003a. *Floodplain Protection Procedural Manual*.